

NTSE 2011-2012 Maharashtra

SAT - NTSE First Stage

Aryan Classes

**NATIONAL TALENT SEARCH EXAMINATION, 2011-2012**

**STATE LEVEL EXAMINATION – QUESTION BOOKLET**

**Maximum Marks: 100**

**Time 90 Minutes**

**SCHOLASTIC APTITUDE TEST**

1. Heat is a form of .....

- (1) energy            (2) force  
(3) pressure        (4) strength

2. We do not get drinking water from :

- (1) sea            (2) lake  
(3) river        (4) pond

3. Water gets converted into water vapour at ..... °C.

- (1) 0            (2) 100  
(3) 10            (4) 110

4. .... is made up of cellulose.

- (1) cell wall        (2) cell membrane  
(3) cytoplasm      (4) nucleus

5. The submarines going to the bottom of the sea have ..... gas filled in its cylinder.

- (1) carbon dioxide      (2) oxygen  
(3) nitrogen              (4) hydrogen

6. A group of cells performing the same function is called as .....

- (1) organ              (2) organ system  
(3) tissues            (4) cells

7. The pregnant woman need ..... Mineral the most.

- (1) potassium          (2) magnesium  
(3) calcium            (4) phosphorus

8. Milch animals are given ..... to increase the quantity of milk.

- (1) grass      (2) straw  
(3) ambon    (4) horse gram

9. The shirish trees are used as ..... source of energy.

- (1) traditional              (2) non-traditional  
(3) man-made              (4) chemical

10. The density of ..... planet is less than that of water.

- (1) Saturn              (2) Jupiter  
(3) Venus              (4) Mercury

11. The constituent of plant origin present in soil is :

- (1) protozoa                      (2) fungi  
(3) worms                          (4) shells

12. In a simple pendulum, to complete one oscillation if the bob moves from A to B and B to C, then which is the path of oscillation ?

- (1)  $A \rightarrow B \rightarrow C \rightarrow B \rightarrow A$   
(2)  $A \rightarrow B \rightarrow C \rightarrow A \rightarrow B$   
(3)  $A \rightarrow B \rightarrow C \rightarrow A \rightarrow C$   
(4)  $A \rightarrow B \rightarrow A \rightarrow B \rightarrow C$

13. Calcium oxide when dissolved in water forms .....

- (1) Calcium hydroxide                      (2) Calcium nitrate  
(3) Calcium oxide                          (4) Calcium carbonate

14. Pure gold is of ..... carat.

- (1) 18                      (2) 26  
(3) 24                      (4) 22

15. The polio vaccine is given to the children under ..... years of age by the Pulse Polio Campaign.

- (1) 7                      (2) 5  
(3) 8                      (4) 6

16. The maximum pollution is done by .....

- (1) Man                      (2) Microorganisms  
(3) Plants                      (4) Water

17. To reduce the air pollution, the vehicles are filled with ..... fuel.

- (1) CNG      (2) petrol  
(3) Diesel    (4) Kerosene

18. Mars has .....moons.

- (1) 2          (2) 4  
(3) 1          (4) 60

19. The angle that the incident ray makes with the normal is called the .....

- (1) angle of reflection    (2) angle of incidence  
(3) opposite angle    (4) reflected ray

20. Find the odd man out :

- (1) anthracite              (2) charcoal  
(3) bituminous            (4) peat

21. China clay is ..... in colour .

- (1) white          (2) red  
(3) green          (4) black

22. From the following which is the symbol of electric cell ?

(1)



(3)



(2)



(4)



23. The..... organelle of the cell controls all the functions of the cell.

- (1) mitochondria                      (2) nucleus  
(3) cell wall                              (4) cell membrane

24., The inert gas used in an electric bulb is :

- (1) argon                                  (2) helium  
(3) neon                                    (4) xenon

25. Rabies is not caused due to the bite of the following :

- (1) dog                                      (2) cat  
(3) mosquito                                (4) monkey

26. The silkworm that yields fine silk, grows-on the leaves of ..... plant.

- (1) mulberry                                (2) mango  
(3) jack-fruit                                (4) banana

27. Photovoltaic cell is made up of .....

- (1) sulphur                                  (2) red phosphorus  
(3) silicon                                    (4) graphite

28. If the object of 4 cm height is placed in front of a plane mirror, what will be the height of the image?

- (1) 8 cm                                      (2) 2 cm  
(3) 6 cm                                      (4) 4 cm

29. Which factor does not increase the rate of chemical reaction ?

- (1) temperature                      (2) concentration
- (3) catalyst                            (4) Water

30. The storage of fossil fuels are .....

- (1) limited                              (2) unlimited
- (3) very less                            (4) sufficient

31. If the south pole of a bar magnet is brought near south pole of another bar magnet, then it will .....

- (1) attract
- (2) repel
- (3) both poles will collide on each other
- (4) no effect

32. The needles of the sewing machine are pointed because .....

- (1) Area and pressure is same.
- (2) If area is less pressure will increase,
- (3) If area is more, pressure will be less.
- (4) More the area, more will be the pressure.

33. The image formed in a plane mirror is .....

- (1) upright                              (2) small
- (3) inverted                            (4) big

34. .... type of magnet is used in a generator.

- (1) disc                      (2) rectangular  
(3) bar                        (4) horse-shoe

35. To obtain salt from the sea water ..... method is used in the salt pans.

- (1) Sublimation                      (2) Distillation  
(3) Fractional distillation        (4) Evaporation

36. .... had tremendous hold over Medieval Europe.

- (1) Language                      (2) Religion  
(3) Art                                (4) Philosophy

37. Which chronological system did Chha. Shivaji Maharaj start as a mark- of sovereignty ?

- (1) A.D.                              (2) Vikram Samwat  
(3) Coronation era                (4) Shaliwahan era

38. Rewrite the following incidents chronologically :

- (I) Formation of 'Muslim League'  
(II) Reformation Act of 'Morley-Minto'  
(III) Partition of Bengal  
(IV) Split in 'Indian National Congress'

- (1) III, I, IV, II                      (2) I, III, II, IV  
(3) I, IV, III, II                      (4) III, I, II, IV



39. The following picture is related to the state of :



- (1) Jagdishpur                      (2) Ayodhya  
(3) Avadh                              (4) Jhansi

40. which is the day celebrated as 'Marathwada Muktidina' ?

- (1) 13th September                      (2) 2nd August  
(3) 17th September                      (4) 15th August

41. which is the place related with 'Jungle Satyagraha'?

- (1) Bilashi                      (2) Wadala  
(3) Malvan                      (3) Shiroda

42. 'Carnatic Wars' were fought between British and .....

- (1) Maratha                      (2) Portuguese  
(3) Rulers of Mysore                      (4) French

43. Who opposed the practice of 'Devdasi in South India' ?

- (1) Ramswamy Periyar Naikar                      (2) Vireshlingam Pantalu  
(3) Narayan Guru                      (4) Ishwar Chandra Vidyasagar

44. Who got passed the resolution of convening the Round Table Conference to solve the problems of Indians ?

- (1) Indian National Congress
- (2) Swaraj Party
- (3) Socialist Party
- (4) Akhil Bharatiya Majoor Party

45. Who said, "Give me blood, I will give you freedom" ?

- (1) Ras Behari Bose
- (2) Sardar Vallabhbhai Patel
- (3) Netaji Subhash Chandra Bose
- (4) Mahatma Gandhi

46. Which was the center of 'saints movement' during medieval period ?

- (1) Alandi           (2) Paithan
- (3) Dehu           (4) Pandharpur

47. In provincial elections of 1937, the National Congress came into power in ..... provinces and formed their ministries.

- (1) 3               (2) 11
- (3) 8               (4) 10

48. During the rule of Britishers commercialization of agriculture means :

- (1) The money invested to increase the agricultural income
- (2) Plantation of cash crops for hard cash profit
- (3) The capital to be invested in agriculture
- (4) The money invested for the production of food grains

49. The ocean floor is the part of .....of crust.

- (1) Sial           (2) Mantle

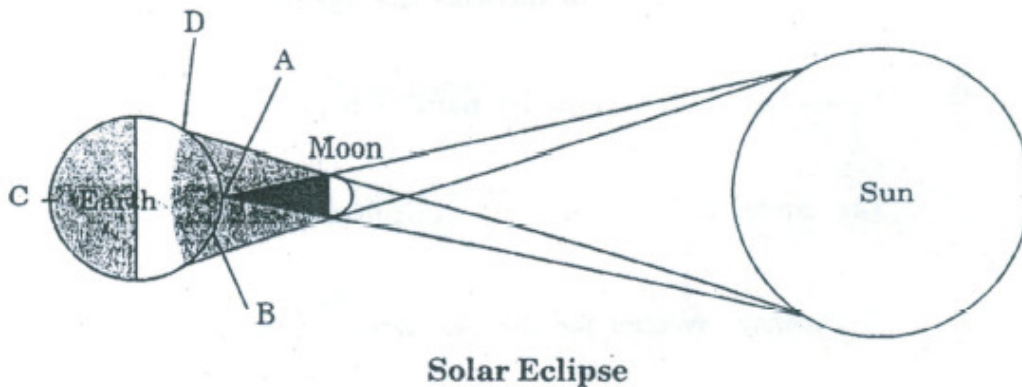
(3) Core (4) Sima

50 ..... National Park is in the region of the Alps mountains.

(1) The Gran Paradiso (2) Yellowstone

(3) Jim Corbett (4) Stelvio

51. In the given figure beside, total solar eclipse is shown by letter :



(1) B (2) A

(3) C (4) D

52. .... stands fifth in the world with respect to area.

(1) Europe (2) Australia

(3) Antarctica (4) South America

53. The reason for tiny crystal formation on the Maharashtra Plateau is :

(1) The lava on the surface cools rapidly

(2) Alkaline nature of rivers

(3) High temperate zone

(4) The lava cools slowly

54. The maximum rainfall in Europe occurs at

(1) Crkvice (2) Cicely

(3) Warsaw                      (4) Astrakhan

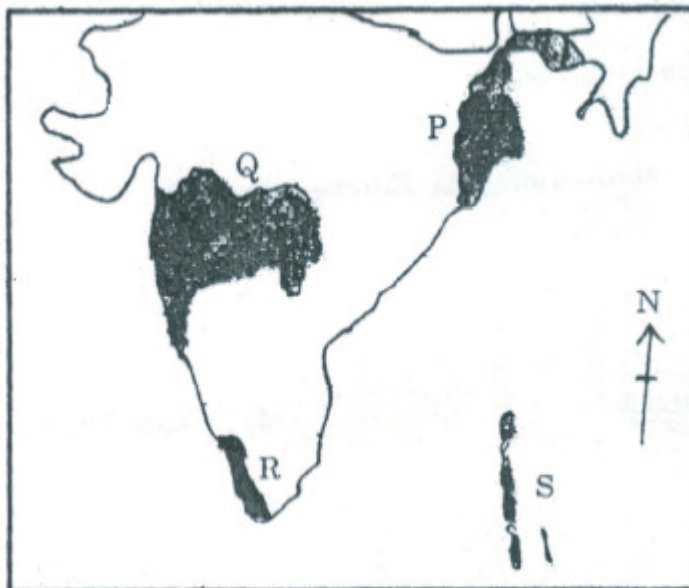
55. Yellowstone National Park is in ..... country.

- (1) Canada                      (2) Mexico  
(3) U.S.A.                      (4) Panama

56. .... is famous for cricket in North America.

- (1) West Indies              (2) Newfoundland  
(3) Hawaii                      (4) Marajo

57. Which type of fishery is carried out in the figure shown along with the letter P ?



- (1) Open sea                      (2) Marine  
(3) Fish farming              (4) Fresh-water

58. The lines joining same height from the sea level are called :

- (1) Isolines                      (2) Contours  
(3) Isotherms                      (4) Isobars

59. Find out the correct pair from those given below :

- (1) Dr. Homi J. Bhabha - Dr. Vikram Sarabhai
- (2) Dr. A.P.J. Abdul Kalam - Dr. Raghunath Mashelkar
- (3) Dr. Jayant Narlikar - Datta Prasad Dabholkar
- (4) Dr. Madhavan Nayer - Narayan Murthy

60. Which one among the following is the basic occupation ?

- (1) The cloth-making (2) Fruit processing
- (3) Iron-steel (4) Sugar industries

61. The Qatar region, area below sea-level is a part of ..... country.

- (1) Saudi Arabia (2) Iraq
- (3) Uganda (4) Egypt

62. The Constitution has given the right of to the citizens for the development of language.

- (1) Equality right
- (2) To oppose exploitation
- (3) Cultural and Educational Right
- (4) Independence

24th October is celebrated as :

- (1) Human Rights nay (2) United Nations Day
- (3) Environment Day (4) International Women's Day

64. National Defence Academy is situated at :

- (1) Delhi (2) Mumbai
- (3) Dehra Dun (4) Pune

65. The most important principle of India's nuclear policy is :

- (1) Limited Use of nuclear weapons

(2) Principled opposition to the nuclear weapons

(3) No first use of nuclear weapons

(4) To increase the atomic power

66. There are ..... members totally in the Legislative Council of Maharashtra .

(1) 78                      (2) 76

(3) 75                      (4) 71

67. Which factor influences the framework of a foreign policy of a nation ?

(1) Small size of the country                      (2) Undeveloped economy

(3) Strong Army                                      (4) Limited population

68. India opened the market for other countries because :

(1) To have the benefits of foreign goods

(2) To cultivate international co-operation

(3) To know about foreign goods

(4) To increase the financial income of the nation

69. A person becomes aware, to fight against injustice and tyranny because of

(1) Right of education                      (2) political rights

(3) Right of living                              (4) The right of expression

70. The foreign policy of India has been influenced by the factor like .....from ancient history.

(1) Monarchy                      (2) Tradition

(3) Trade                              (4) Tolerance

71. In- the data 5, 7, 8, 7, 8, 6, 5, 8, 7, 5, 7, 8, 5, 6, 8, 7, 5, 7, 7, 6, the score 7 occurs ..... times.

- (1) 6            (2) 5  
(3) 7            (4) 8

72. If the ratio of circumference and area of a circle is 3 : 2, then find the radius of the circle.

- (1)  $\frac{2}{5}$  cm            (2)  $\frac{4}{3}$  cm            (3)  $\frac{3}{4}$  cm            (4)  $\frac{5}{2}$  cm

73. The ratio of volume of a cone and volume of a cylinder having equal radii of the bases and equal heights is :

- (1)  $\frac{1}{3}$                       (2) 3  
(3)  $\frac{1}{2}$                       (4) 2

74. The difference between the present ages of two brothers is 4 years. If the ratio of their ages 5 years ago was 5 : 7, then what is the present age of the younger brother ?

- (1) 12 years            (2) 15 years  
(3) 18 years            (4) 20 years

75. The ratio of the adjacent sides of a rectangle is 3 : 4 and its area is 192 sq. cm. Find the lengths of its sides The ratio of the adjacent sides.

- (1) 6 cm, 8 cm            (2) 18 cm, 24 cm  
(3) 12 cm, 16 cm            (4) 13 cm, 24 cm

76. Mr. Mafatlal sold wheat at Rs. 36,000 that he had bought for Rs. 30,000 and jowar at Rs. 24,000 that he had bought for Rs. 20,000. In which transaction was the profit percentage more ?

- (1) Equal in both            (2) Jowar  
(3) Wheat                      (4) Cannot say

77. The expansion of  $(x + 8)^3$  is :

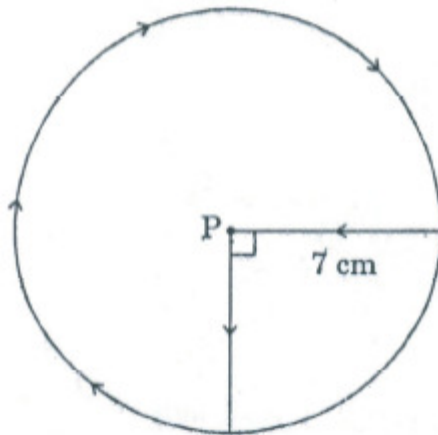
- (1)  $x^3 - 24x^2 + 192x - 512$

(2)  $x^3 + 24x^2 + 192x - 512$

(3)  $x^3 - 24x^2 + 192x + 512$

(4)  $x^3 + 24x^2 + 192x + 512$

78.



As shown in the figure, the distance travelled from the centre point P along the direction of the arrows, back to point P is .....

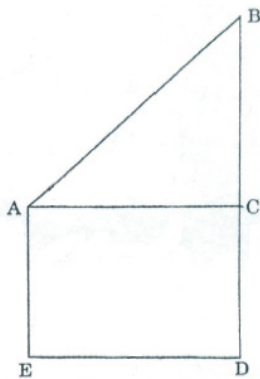
(1) 47 cm

(2) 58 cm

(3) 40 cm

(4) 54 cm

79.





□ ACDE is a rectangle.  $l(AE) = 4$  cm,  $l(ED) = 6$  cm,  $l(AB) = 10$  cm.

∴  $A(\Delta ABC) = \dots\dots\dots$  sq. cm.

(1) 12      (2) 24

(3) 36      (4) 48

80. The average of marks scored by a student in 6 subjects in a unit test is 18. If he had scored 18 and 20 marks in two subjects, instead of 15 and 17, then what is the average of his marks ?

(1) 18.4      (2) 18.18

(3) 17.8      (4) 19

81. Which of the following are the factors of the polynomial  $8m^3 + \frac{1}{27m^3}$  ?

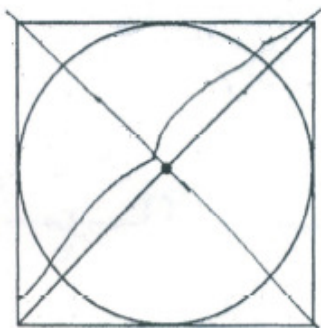
(1)  $\left(2m + \frac{1}{3m}\right) \left(4m^2 - \frac{1}{2} + \frac{1}{9m^2}\right)$

(2)  $\left(2m + \frac{1}{3m}\right) \left(4m^2 - \frac{2}{3} + \frac{1}{9m^2}\right)$

(3)  $\left(2m + \frac{1}{3m}\right) \left(4m^2 - \frac{3}{2} + \frac{1}{9m^2}\right)$

(4)  $\left(2m + \frac{1}{3m}\right) \left(4m^2 - 2 + \frac{1}{9m^2}\right)$

83.



The length of diagonal of a square is 14 cm. What is the area of the circle touching all the sides of this square ?

(1) 77 sq. cm      (2) 154 sq. cm

(3) 154 cm      (4) 77 cm

83. The numbers P, 14, 27, 18 are in proportion. Then P = .....

- (1) 15
- (2) 18
- (3) 21
- (4) 25

84. How much is  $4^{-1} - 2^{-3}$  ?

- (1)  $\frac{1}{8}$                       (2)  $\frac{1}{16}$
- (3)  $\frac{1}{4}$                         (4)  $\frac{1}{32}$

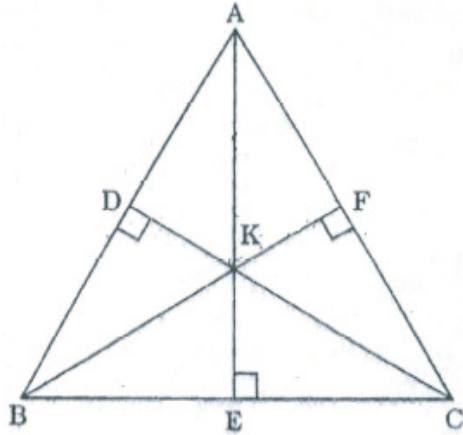
85.  $\left(x + \frac{1}{x}\right)^2 + \left(x - \frac{1}{x}\right)^2 = \dots\dots\dots$

- (1)  $2x^2 - \frac{2}{x^2}$                       (2)  $2x^2 + \frac{2}{x^2}$
- (3)  $x^2 + \frac{1}{x^2}$                         (4) Other than this

86. On the graph paper, if the origin and the point with coordinates (3, -4) are plotted, then what is the distance between these two points?

- (1) -10 units                      (2) 10 units
- (3) -5 units                        (4) 5 units

87.



In an equilateral  $\Delta ABC$ , perpendiculars are drawn from the 3 vertices to the opposite side. Point K is their point of concurrence. The area of  $\square ADKF$  is 32 sq. cm, then what is the area of  $\Delta ABC$  ?

- (1) 96 sq. cm
- (2) 64 sq. cm
- (3) 128 sq. cm
- (4) None of these

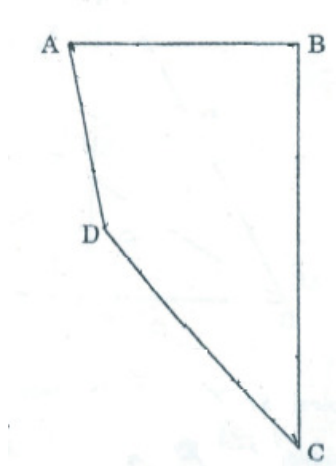
88. In a right-angled triangle, the lengths of the sides forming right angle are 18 m and 24 m respectively. What is the length of the hypotenuse of the triangle?

- (1) 28 m
- (2) 300 m
- (3) 30 m
- (4) 280 m

89. There are 5000 workers in a factory. If 30% of the workers are removed every year, then what will be the number of workers after 3 years?

- (1) 1750
- (2) 1751
- (3) 1700
- (4) 1715

90.



In  $\square ABCD$ ,  $l(AB) = 50$  m,  $l(BC) = 120$  m,  $l(CD) = 70$  m and  $l(DA) = 60$  m. By taking a distance of 14 m from all the four vertices A, B, C and D, arcs are drawn and that corner space is reserved. Then what is the area of the reserved space ?

- (1) 616 sq. m      (2) 308 sq. m  
(3) 1332 sq. m    (4) 150 sq. m

91. The 'Antibiotic' factory is at ..... in Maharashtra.

- (1) Nasik            (2) Pimpri  
(3) Mumbai        (4) Nagpur,

92. The occupation of salt pan is practised in the oceanic landform of :

- (1) Lagoons                      (2) Beach Lagoons  
(3) Wave cut platform        (4) Spit

93. The holy book of "Granthasahib" has referred the name of :

- (1) Sant Dnyaneshwar        (2) Sant Namdov  
(3) Sant Eknath                (4) Sant Tukaram

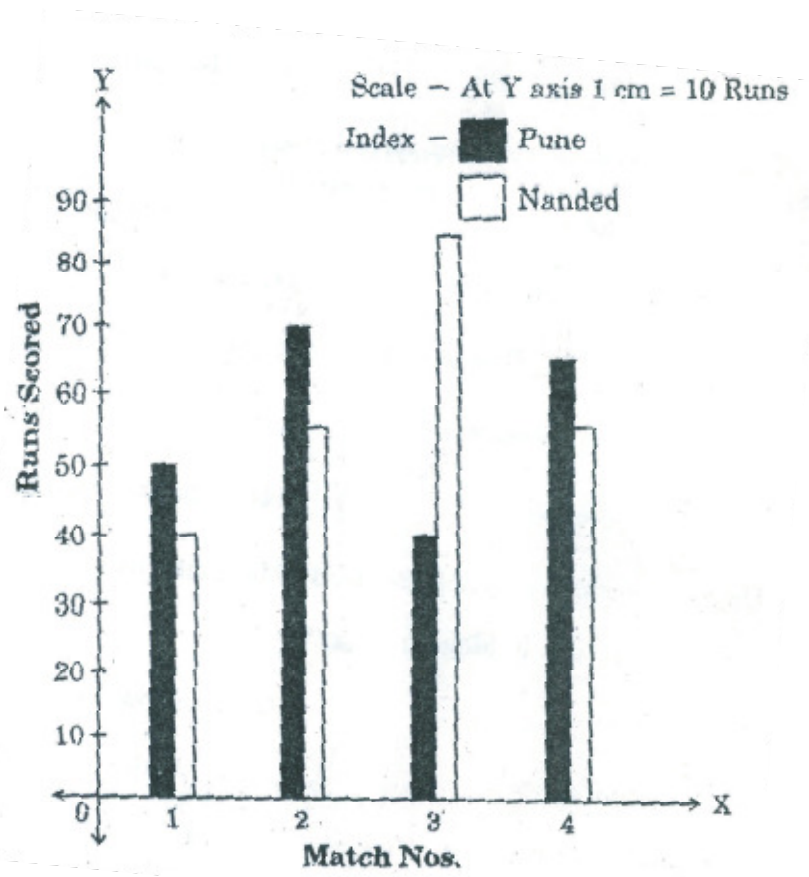
94. There is a sanctuary for the bird (Maldhok) the ' great Indian Bustard at ..... in Maharashtra.

- (1) Nanaj                      (2) Rehakuri  
(3) Ranjangaon              (4) Mulher

95. The maximum number of members in a Gram Panchayat is :

- (1) Fourteen                  (2) Fifteen  
(3) Sixteen                    (4) Seventeen

96 and 97. The following joint bar graph is of runs scored by the players of pune and Nanded district cricket team. Answer the question nos. 96 and 97 with the help of the following joint bar graph .



96. What is the difference between runs scored by Pune team in the first match and Nanded in the third match?

- (1) 30      (2) 35

(3) 235 (4) 45

97. What is the total score of Nanded team?

(1) 245 (2) 225 (3) 235 (4) 255

98. What is the name of a famous garden at 'Paithan' ?

(1) Brindavan or Vrindavan Garden

(2) Hanging Garden

(3) Sant Dnyaneshwar Garden

(4) Pandit Nehru Garden

99. The place called.....at Bhandara is famous for bird sanctuary.

(1) Sangamner (2) Sinnar

(3) Jalgaon (4) Navegaon Bandh

100. The parallel government was formed in the following district :

(1) Kolhapur (2) Solapur

(3) Satara (4) Pune